

FUTURE FISHERIES IMPROVEMENT PROGRAM GRANT APPLICATION

Please fill in the highlighted areas

*all sections (IA, IB, IC, etc.) must be addressed or the application will be considered invalid***I. APPLICANT INFORMATION**

- A. Applicant Name: Trout Unlimited
- B. Mailing Address: 312 N. Higgins St
- C. City: Missoula State: MT Zip: 59802
- Telephone: 406-544-9649 E-mail: cbrisette@tu.org
- D. Contact Person: Christine Brisette
- Address if different from Applicant: --
- City: -- State: -- Zip: --
- Telephone: -- E-mail: --
- E. Landowner and/or Lessee Name (if other than Applicant): Bitterroot National Forest
- Mailing Address: 1801 North 1st Street
- City: Hamilton State: MT Zip: 59840
- Telephone: 363-7100 E-mail: scarbonari@fs.fed.us

II. PROJECT INFORMATION*

- A. Project Name: Wilson Ditch Fish Screen, Upper West Fork Bitterroot River
- River, stream, or lake: West Fork Bitterroot River
- Location: Township: 4S Range: 22W Section: 4
- Latitude: 45.524158 Longitude: -114.318442 *within project (decimal degrees)*
- County: Ravalli

Purpose of Project:

B.

This project will eliminate native trout entrainment in the Wilson ditch which diverts water from the upper West Fork Bitterroot River (above Painted Rocks Reservoir). The project was identified as a top priority for bull trout conservation in a 2017 inventory and prioritization of Bitterroot irrigation diversions, completed by TU in collaboration with FWP, the Bitterroot National Forest and the Bitterroot Conservation District.

The adfluvial bull trout population in and above Painted Rocks Reservoir is recognized as one of the highest bull trout conservation priorities in the Bitterroot because of the long-term cold water refugia predicted for these waterbodies. While habitat above Painted Rocks is largely intact, passage and entrainment remain challenges in the watershed. This project will screen the highest diversion on the West Fork Bitterroot, lying just upstream of a documented bull trout spawning reach. The fishery as a whole is dominated by native species, making this project a key opportunity to reduce juvenile and young-of-year entrainment and enhance native populations. Because this diversion is so high in the watershed, and fairly isolated, this relatively small project has the potential to have substantial impacts. Once installed, this screen would reconnect 34 miles of bull trout critical habitat tributaries to 5 miles of the Upper West Fork Bitterroot River. The project would screen 1.7 cfs, approximately 15% of baseflow.

C. Brief Project Description:

Trout Unlimited will install a passive, self-cleaning corrugated water screen in the Wilson ditch to eliminate native trout entrainment. The Wilson ditch was silted in following fires in the upper watershed. When TU became aware of the water users intention to reactivate the ditch, we initiated conversations to include a fish screen in the design. The combination of the diversion's location in the watershed, proximity to native strongholds and spawnings reaches, and the opportunity to share expense and effort with the water users made this a high priority diversion for TU and regional biologists.

In 2018, TU led conversations with the water users on the Wilson ditch and contracted the survey and design of this project using Bitterroot NF funds. The resulting design and cost estimate include a corrugated water screen, a diversion upgrade and ditch regrading to ensure sufficient flows and slope for screen function. Water users will contribute \$7,500 to the project (14% of total costs) to cover the majority of the expense associated with reactivating the ditch. TU has talked at length with the water users who have agreed to operate and maintain the screen in exchange for financial support for the diversion infrastructure upgrade. The property has been in the family for over 3 generations and will be leased for haying to a downstream neighbor.

The West Fork Bitterroot River, at this point, is a perennial stream with 12-foot bankful width and 3-foot bankful depth. Baseflows were measured at 10 cfs and are predicted to peak at 60 cfs (1.5 year flood) or 160 cfs (10 year flood) (Sando et al 2015). Median substrate size is 7mm. The ditch runs for 1000 feet before reaching 45 acres of flood-irrigated hay ground.

D. Length of stream or size of lake that will be treated:

30 ft of stream will be impacted at the point of diversion, 1.7 cfs of diverted water will be screened (15% of baseflow)

E. Project Budget:

Grant Request (Dollars): \$ 28,083

Contribution by Applicant (Dollars): \$ In-kind \$
(salaries of government employees are not considered as matching contributions)

Contribution from other Sources (Dollars): \$ 25,405 In-kind \$ 1,300
(attach verification - See page 2 budget template)

Total Project Cost: \$ 54,788

F. Attach itemized (line item) budget – see template

G. Attach **specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support and fish biologist support, and/or other information necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete a *supplemental questionnaire*** (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).

H. **Attach land management & maintenance plans that will ensure protection of the reclaimed area.**

III. PROJECT BENEFITS*

A. What species of fish will benefit from this project?:

Bull trout, westslope cutthroat trout, brook trout (site is dominated by native fish)

B. How will the project protect or enhance wild fish habitat?:

The project will protect juvenile and young of year native trout from entrainment in an irrigation diversion along a known bull trout spawning reach in the upper West Fork Bitterroot River.

C. Will the project improve fish populations and/or fishing? To what extent?:

Yes. The project will reduce entrainment of juvenile and young of year native trout, thereby enhancing populations.

D. Will the project increase public fishing opportunity for wild fish and, if so, how?:

Yes. The majority of the surrounding land is owned by Bitterroot National Forest, with full public access for fishing.

E. The project agreement includes a 20-year maintenance commitment. Please discuss your ability to meet this commitment.

TU, BNF and water users on the diversion will enter into a funding, operation and maintenance agreement that will include a 20-year maintenance commitment. While the irrigator will assume primary maintenance responsibilities, Bitterroot NF is the landowner at the point of diversion, with staff available to visit the site when working in the area. TU, additionally, is committed to ensuring the function of the screen and will be the point of contact for irrigators if problems arise.

- F. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?:

The Wilson water right dates back to 1910, meaning that for over a century, this ditch has entrained native West Fork Bitterroot trout. Our project will eliminate this entrainment hazard by screening the ditch.

- G. What public benefits will be realized from this project?:

The project will enhance native fish populations in publicly-accessible streams

- H. Will the project interfere with water or property rights of adjacent landowners? (explain):

No. The water users on this diversion are supportive of this project and will maintain full access to their water right with this design. The Bitterroot National Forest is the landowner and is also supportive of the project (see attached letter).

- I. Will the project result in the development of commercial recreational use on the site?: (explain):

No

- J. Is this project associated with the reclamation of past mining activity?:

No

Each approved project applicant must enter into a written agreement with Montana Fish, Wildlife & Parks specifying terms and duration of the project. The applicant must obtain all applicable permits prior to project construction. A competitive bid process must be followed when using State funds.

IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature:



Date:

11/29/2018

Sponsor (if applicable):

--

***Highlighted boxes will automatically expand.**

Wilson Ditch fish screen

Mail To: Montana Fish, Wildlife & Parks
Fisheries Division
PO Box 200701
Helena, MT 59620-0701

E-mail To: Michelle McGree
mmcgree@mt.gov
(electronic submissions MUST be signed)

Incomplete or late applications will be rejected and returned to applicant.
Applications may be rejected if this form is modified.

*****Applications must be signed and *received* by the Future Fisheries Program Officer in Helena before December 1 and June 1 of each year to be considered for the subsequent funding period.*****

Both tables must be completed or the application will be returned

					CONTRIBUTIONS			
WORK ITEMS (ITEMIZE BY CATEGORY)	NUMBER OF UNITS	UNIT DESCRIPTION*	COST/UNIT	TOTAL COST				
					FUTURE FISHERIES REQUEST	IN-KIND SERVICES**	IN-KIND CASH	TOTAL
Personnel***								
Survey	1	lump sum	\$4,175.00	\$ 4,175.00	-		\$4,175.00	\$ 4,175.00
Design	1	lump sum	\$8,100.00	\$ 8,100.00	-		\$8,100.00	\$ 8,100.00
Engineering	10	hours	\$150.00	\$ 1,500.00	-		1,500.00	\$ 1,500.00
Permitting	8	hours	\$45.00	\$ 360.00	-		360.00	\$ 360.00
Oversight	40	hours	\$45.00	\$ 1,800.00	1,080.00		720.00	\$ 1,800.00
Coordination with landowners/ water users	30	hours	\$45.00	\$ 1,350.00	-		1,350.00	\$ 1,350.00
			Sub-Total	\$ 17,285.00	\$ 1,080.00	\$ -	\$16,205.00	\$ 17,285.00
Travel								
Mileage	400	miles	\$0.55	\$ 218.00	218.00			\$ 218.00
Per diem				\$ -	-			\$ -
			Sub-Total	\$ 218.00	\$ 218.00	\$ -	\$ -	\$ 218.00
Construction Materials****								
Screen with protective cover	1	screen	\$12,800.00	\$ 12,800.00	8,800.00		4,000.00	\$ 12,800.00
Headgate: modular steel	1	headgate	\$3,000.00	\$ 3,000.00	-		3,000.00	\$ 3,000.00
PVC fish return pipe, 12"	35	linear foot	\$25.00	\$ 875.00	875.00			\$ 875.00
Seed	20	pounds	\$20.00	\$ 400.00	400.00			\$ 400.00
Plants	50	plants	\$4.00	\$ 200.00	200.00			\$ 200.00
30"-36" rock (furnished)	15	cubic yard	\$95.00	\$ 1,425.00	1,425.00			\$ 1,425.00
				\$ -				\$ -
			Sub-Total	\$ 18,700.00	\$ 11,700.00	\$ -	\$ 7,000.00	\$ 18,700.00
Equipment and Labor								
Construction staking	1	lump sum	\$750.00	\$ 750.00	750.00			\$ 750.00
Erosion control and dewatering	1	lump sum	\$2,000.00	\$ 2,000.00	2,000.00			\$ 2,000.00
Clearing and grubbing	1	lump sum	\$1,000.00	\$ 1,000.00	880.00	120.00		\$ 1,000.00
Ditch Excavation	220	cubic yard	\$18.00	\$ 3,960.00	1,285.00	475.00	2,200.00	\$ 3,960.00
Excavation (screen, rock)	1	lump sum	\$2,000.00	\$ 2,000.00	1,760.00	240.00		\$ 2,000.00
Place 30-36" rock	15	cubic yard	\$50.00	\$ 750.00	660.00	90.00		\$ 750.00
Install Fish screen	1	lump sum	\$2,000.00	\$ 2,000.00	1,760.00	240.00		\$ 2,000.00
Spider excavator	5	hours	\$225.00	\$ 1,125.00	990.00	135.00		\$ 1,125.00
Dump track	5	hours	\$100.00	\$ 500.00	500.00			\$ 500.00
			Sub-Total	\$ 14,085.00	\$ 10,585.00	\$ 1,300.00	\$ 2,200.00	\$ 14,085.00
Mobilization								
Mobilization	1	lump sum	\$4,500.00	\$ 4,500.00	4,500.00			\$ 4,500.00
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
			Sub-Total	\$ 4,500.00	\$ 4,500.00	\$ -	\$ -	\$ 4,500.00
TOTALS				\$ 54,788.00	\$ 28,083.00	\$ 1,300.00	\$ 25,405.00	\$ 54,788.00

OTHER REQUIREMENTS:

All of the columns in the budget table and the matching contribution table MUST be completed appropriately or the application will be invalid. Please see the example budget sheet for additional clarification.

*Units = feet, hours, inches, etc. Do not use lump sum unless there is no other way to describe the costs.

**Can include in-kind materials. Justification for in-kind labor (e.g. hourly rates used for calculations). Describe here or in text.

Reminder: Government salaries cannot be used as in-kind match

***The Review Panel suggests that design and oversight costs associated with a proposed project not exceed 15% of the total project budget. If design and oversight costs are in excess of 15%, applications must include a minimum of two competitive bids for the cost of undertaking the project.

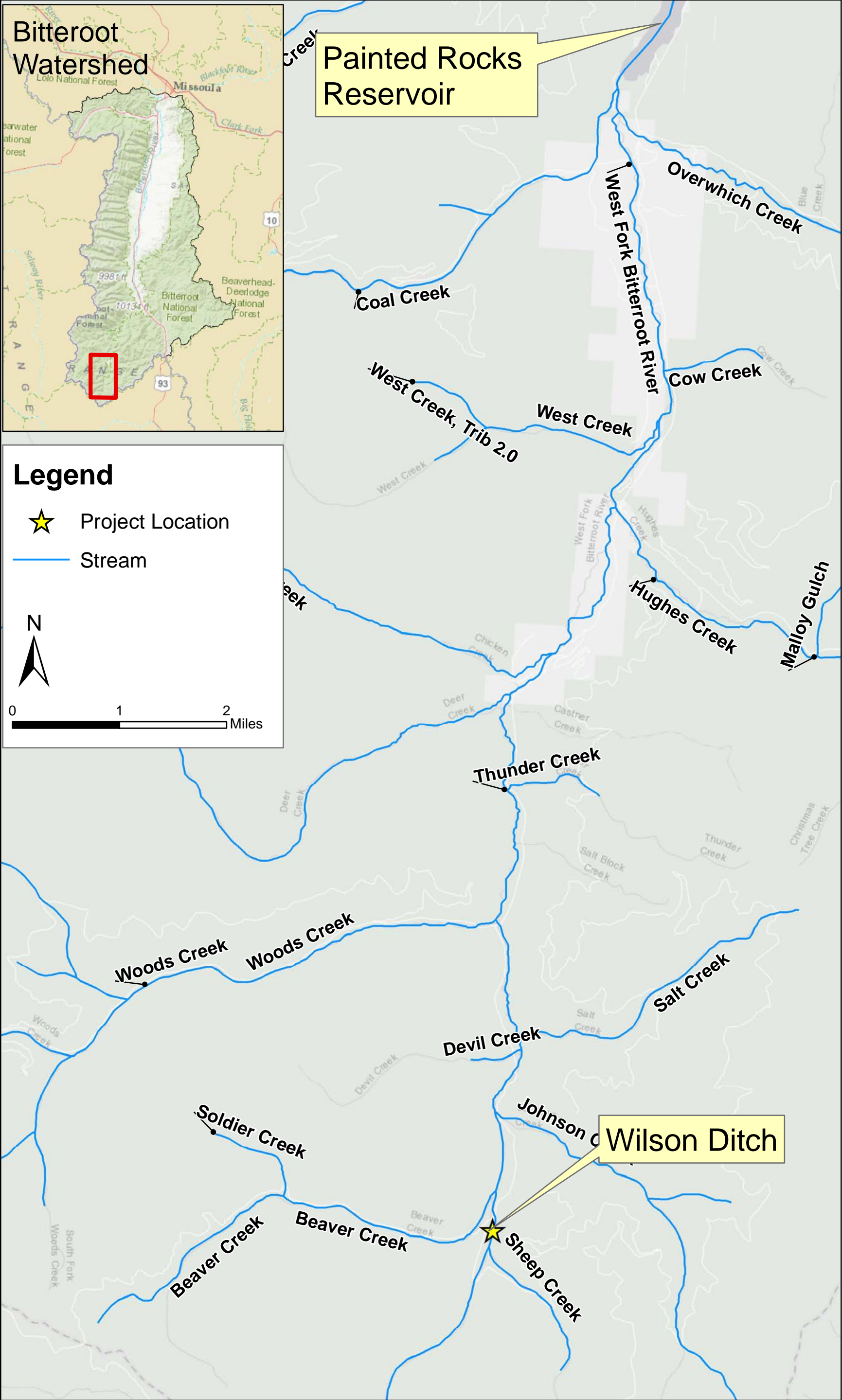
****The Review Panel recommends a maximum fencing cost of \$1.50 per foot. Additional costs may be the responsibility of the applicant and/or partners.

MATCHING CONTRIBUTIONS (do not include requested funds)

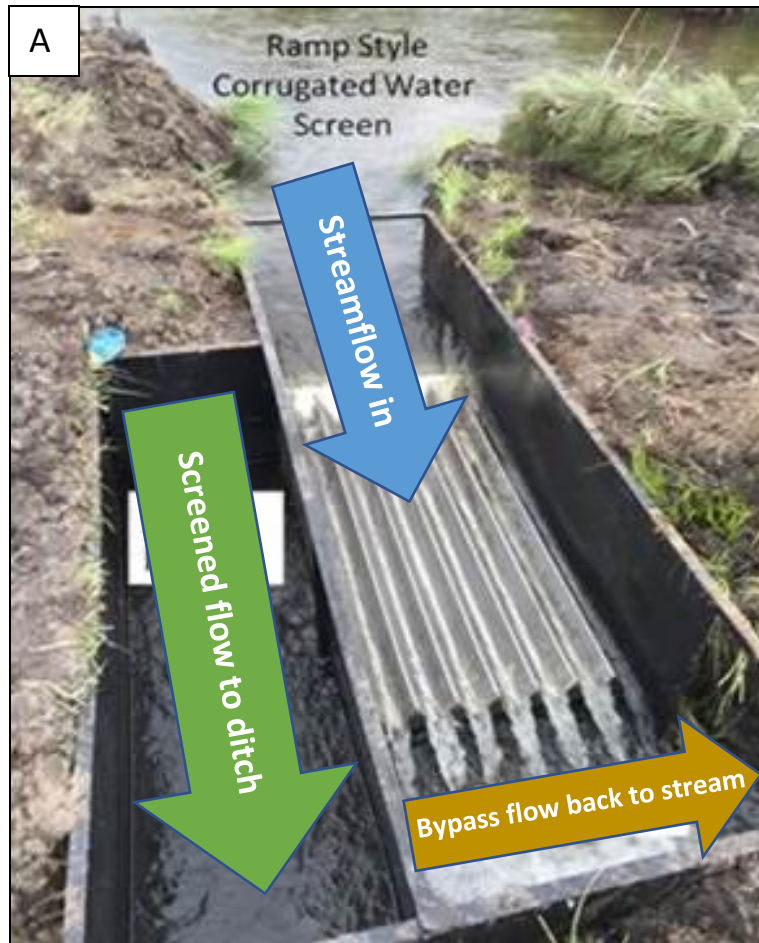
CONTRIBUTOR	IN-KIND SERVICE	IN-KIND CASH	TOTAL	Secured? (Y/N)
Bitterroot National Forest	\$ -	\$13,625.00	\$ 13,625.00	Y

USDA Forest Service (Public private nexus projects)		\$1,080.00	\$ 1,080.00	Y
Bitterroot Chapter Trout Unlimited	\$ -	\$ 4,500.00	\$ 4,500.00	Y
Water Users	\$ 1,300.00	\$ 6,200.00	\$ 7,500.00	Y
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
TOTALS	\$ 1,300.00	\$ 25,405.00	\$ 26,705.00	

Wilson Ditch Fish Screen



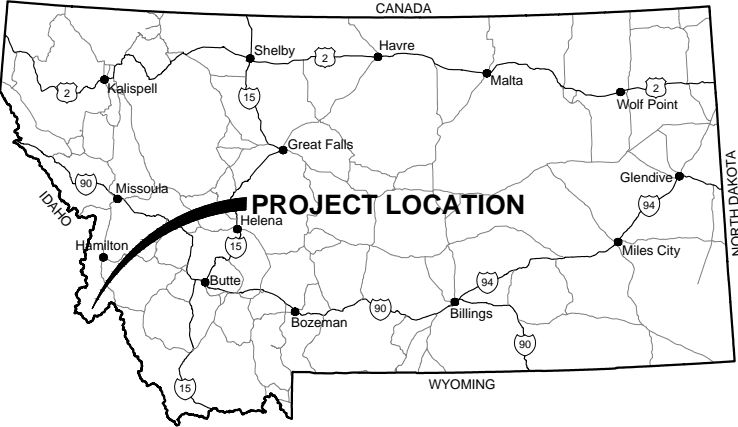
Wilson Ditch fish screen



A. The corrugated water screen will be placed in the ditch. Stream water flows over the perforated screen, with the majority of water falling through the screen vertically and continuing into the ditch. A portion of water flows across the top of the screen carrying fish and debris into a 12" buried bypass pipe that returns to the creek.

B. Fish and debris travel along the stainless steel fish trough, into a bypass pipe, and back to the stream. Lab studies have shown no bruising, descaling or injury to screened fish.

SHEET 1	COVER
SHEET 2	OVERALL SITE PLAN & CONTROL DIAGRAM
SHEET 3	STREAM PLAN & PROFILE
SHEET 4	EXISTING DITCH PLAN & PROFILE
SHEET 5	NEW DITCH PROFILE
SHEET 6	CORRUGATED WATER SCREEN DETAILS



TROUT UNLIMITED

WEST FORK BITTERROOT - DIVERSION & FISH SCREEN

CONCEPTUAL DESIGN

SECTION PB40, TOWNSHIP 4S, AND RANGE 22W
LAT: 45.524295°, LONG: -114.318782°

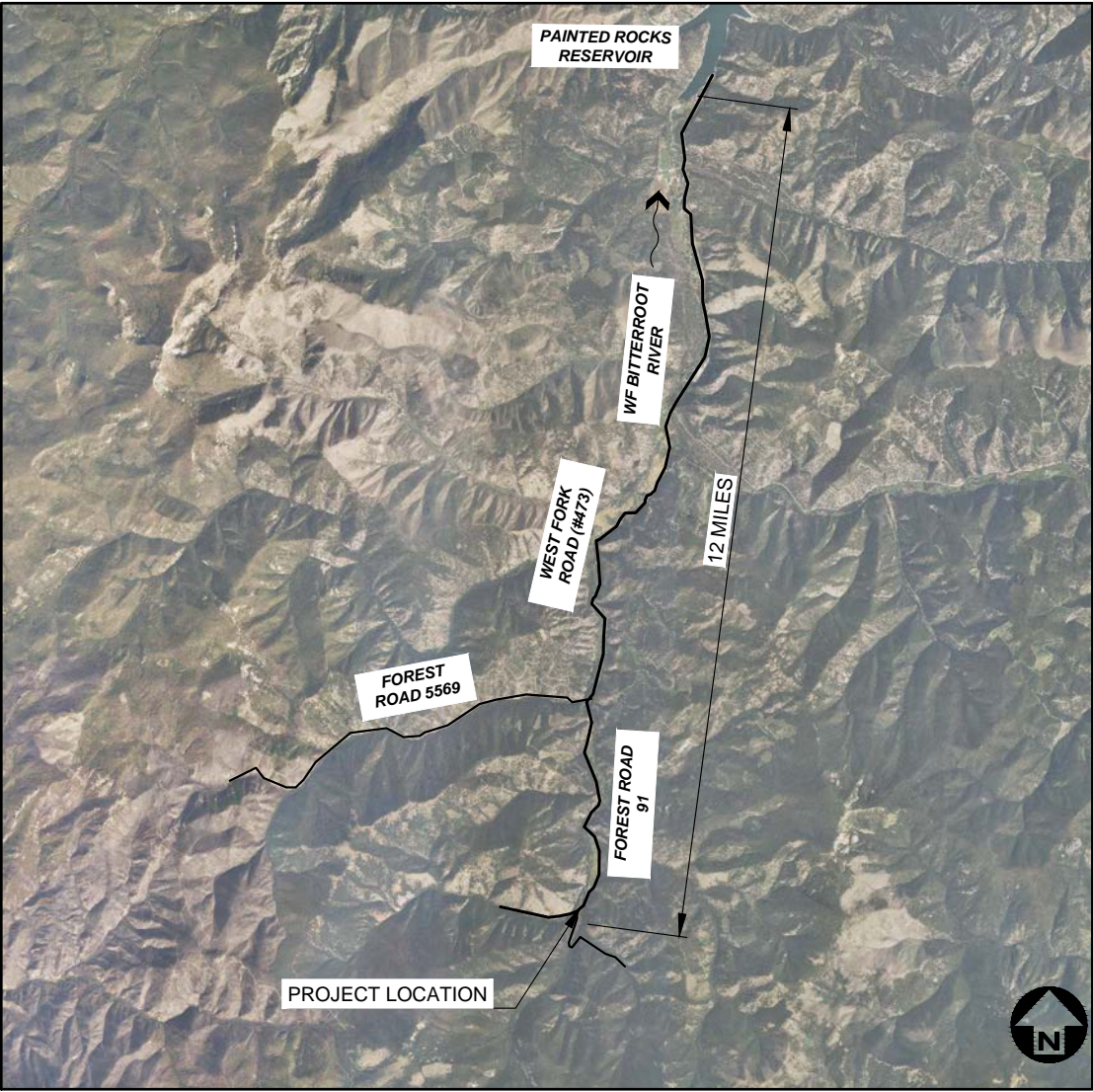
PLANS PREPARED FOR:

TROUT UNLIMITED



PREPARED BY:

RYAN ELLIOTT, P.E.
GREAT WEST ENGINEERING



NOT TO SCALE

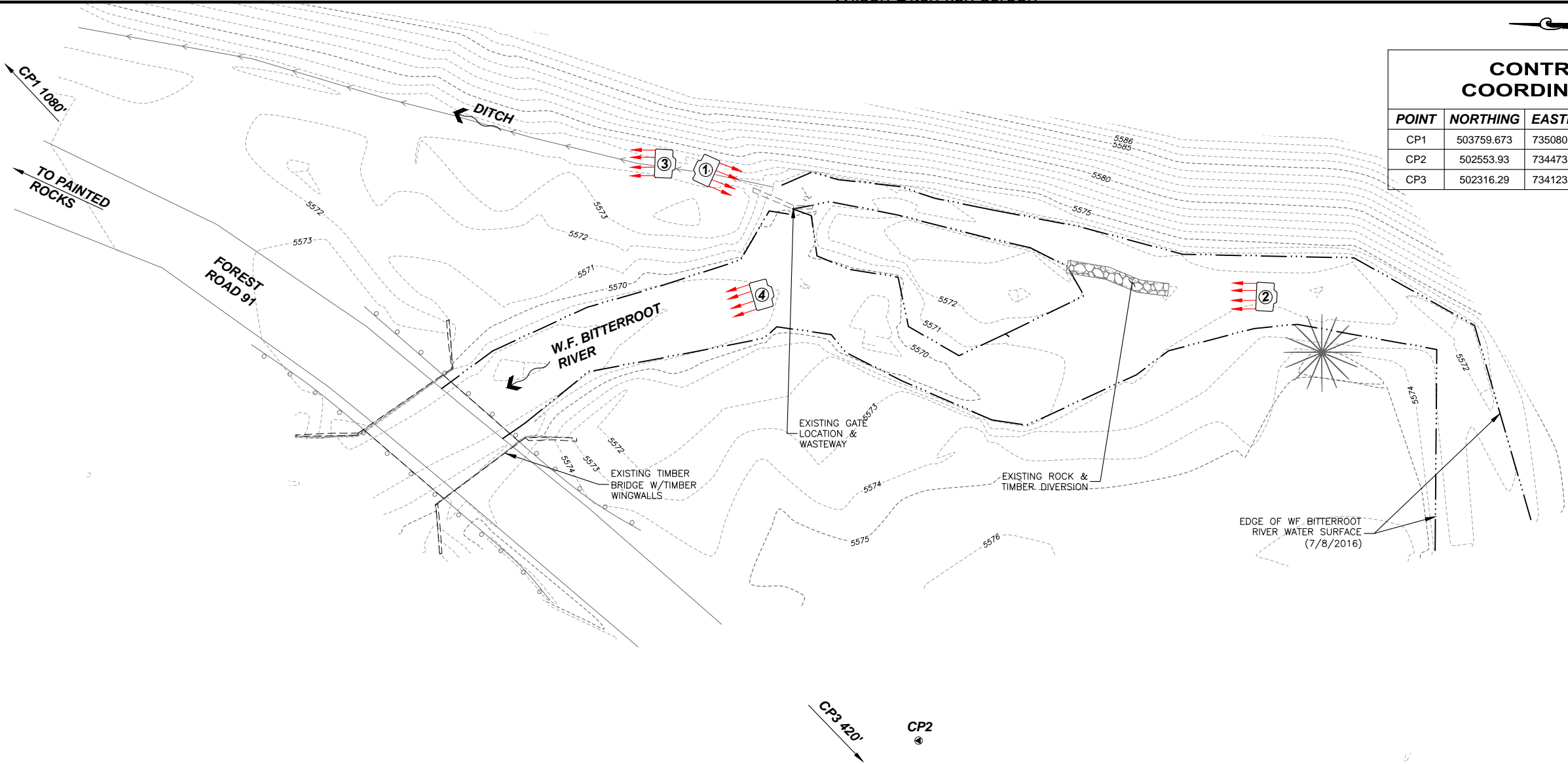
NO.	REVISION DESCRIPTION	BY	DATE	SET NO.
				SHEET NO.
△				1
△				
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CONTROL POINT COORDINATE TABLE*				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	503759.673	735080.637	5548.218	REBAR W/CAP
CP2	502553.93	734473.385	5576.53	REBAR W/CAP
CP3	502316.29	734123.697	5590.294	REBAR W/CAP

CONCEPTUAL



OVERALL SITE PLAN & CONTROL DIAGRAM



SITE PHOTO 1: LOOKING AT EXISTING HEADGATE



SITE PHOTO 2: LOOKING AT EXISTING DIVERSION STRUCTURE



SITE PHOTO 3: LOOKING
DOWNSTREAM IN DITCH



SITE PHOTO 4: LOOKING DOWNSTREAM ON CHANNEL TOWARDS BRIDGE

TROUT UNLIMITED
WEST FORK BITTERROOT -
DIVERSION & FISH SCREEN
OVERALL SITE PLAN & CONTROL DIAGRAM

SHEET NO.

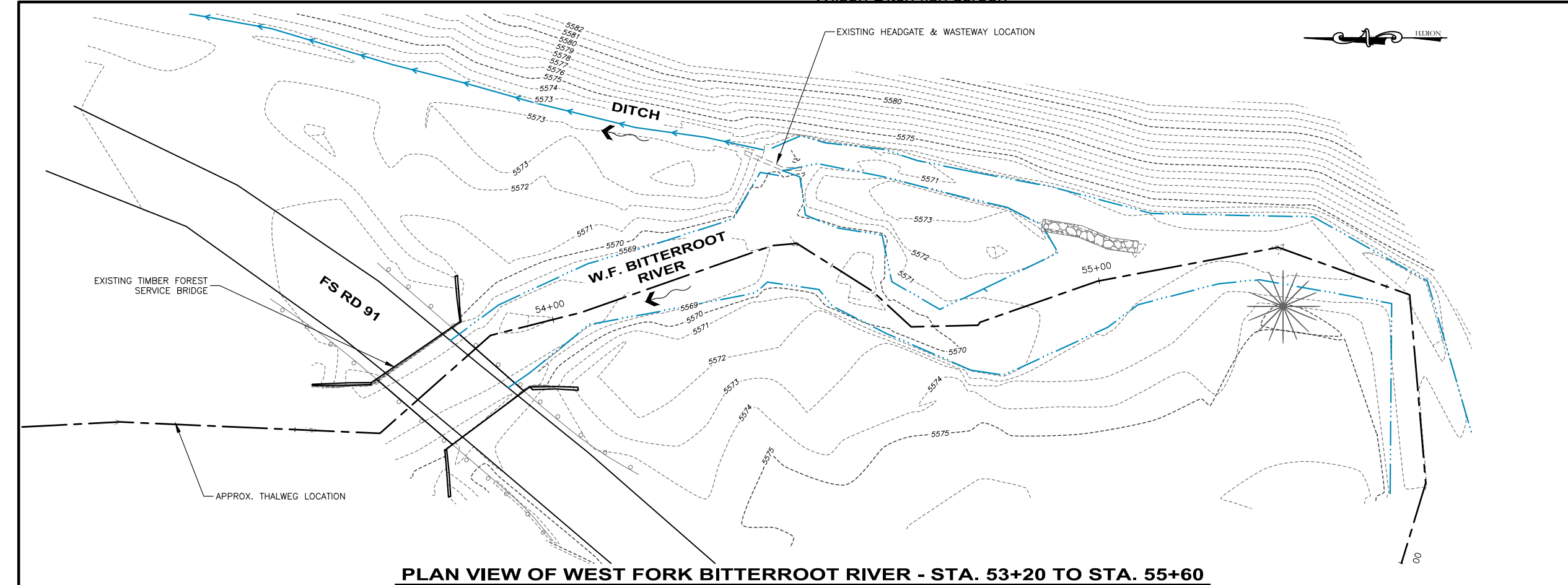
2

OF 6

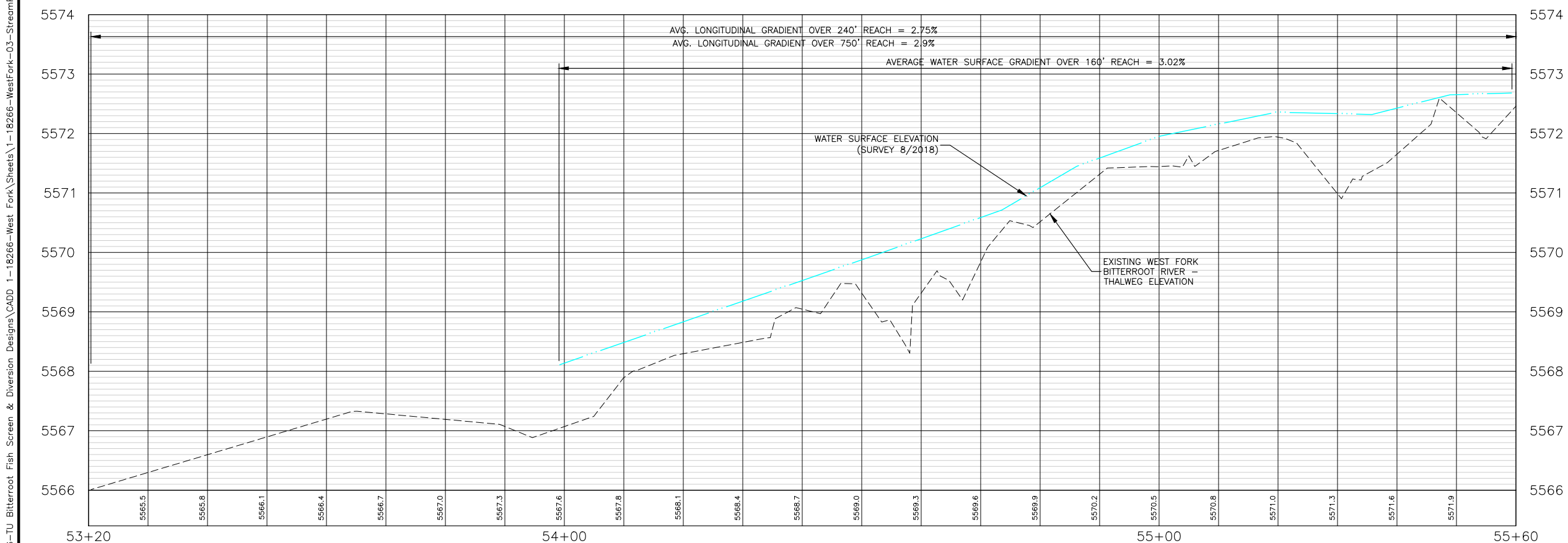
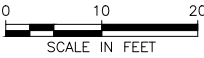


PROJECT: 1-18266
DESIGNED: RME
DRAWN: RME
CHECKED: ---
APPROVED: ---
DATE: NOVEMBER 16, 2018

NO.	REVISION DESCRIPTION	BY	DATE
1			
2			
3			
4			
5			



PLAN VIEW OF WEST FORK BITTERROOT RIVER - STA. 53+20 TO STA. 55+60



PROFILE VIEW OF WEST FORK BITTERROOT RIVER - STA. 53+20 TO STA. 55+60

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'

CONCEPTUAL

NO.	REVISION DESCRIPTION	BY	DATE
1			
2			
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5			

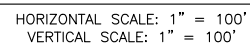
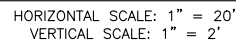
PROJECT: 1-18266
DESIGNED: RME
DRAWN: RME
CHECKED: ---
APPROVED: ---
DATE: NOVEMBER 16, 2018



TROUT UNLIMITED
WEST FORK BITTERROOT -
DIVERSION & FISH SCREEN
STREAM PLAN & PROFILE



A horizontal scale bar with a black and white checkered pattern. It has tick marks at 0, 10, and 20. Below the bar is the text "SCALE IN FEET".



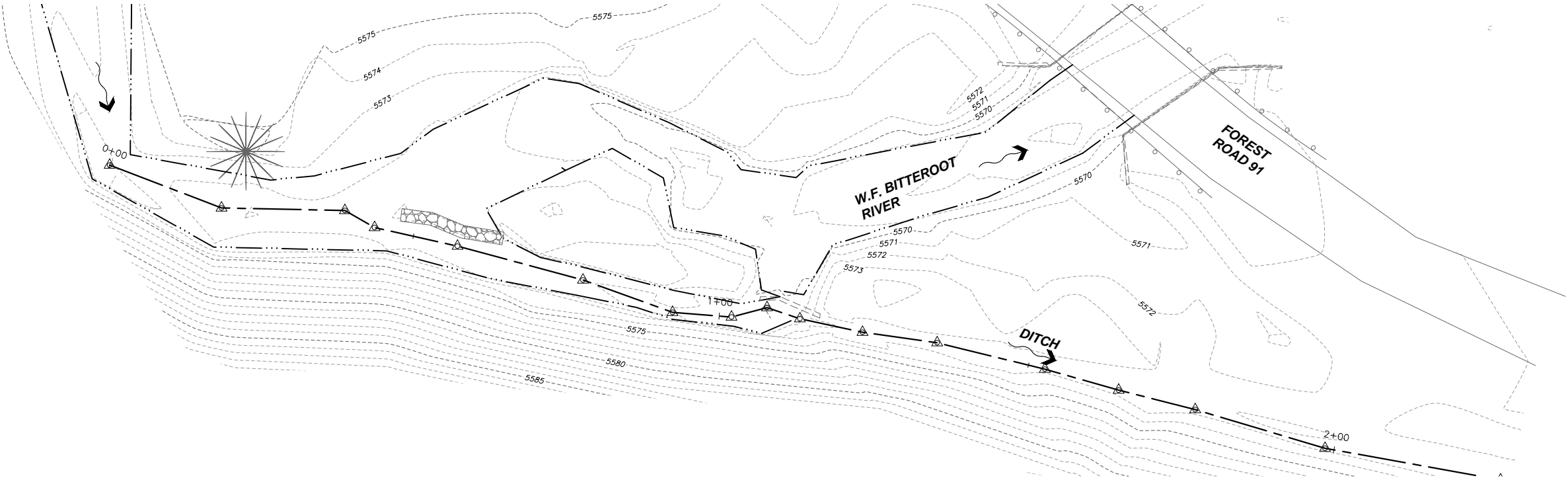
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PROJECT: 1-18266
DESIGNED: RME
DRAWN: RME
CHECKED: ---
APPROVED: ---
DATE: NOVEMBER 16, 2018

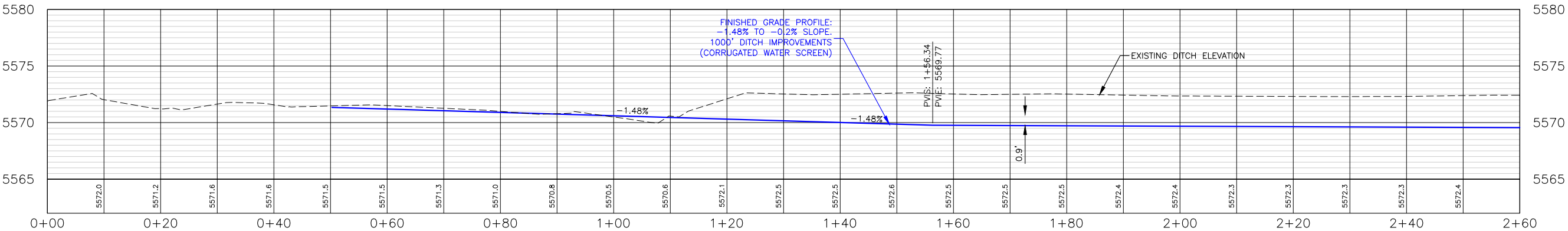


SHEET NO.

4
OF 6

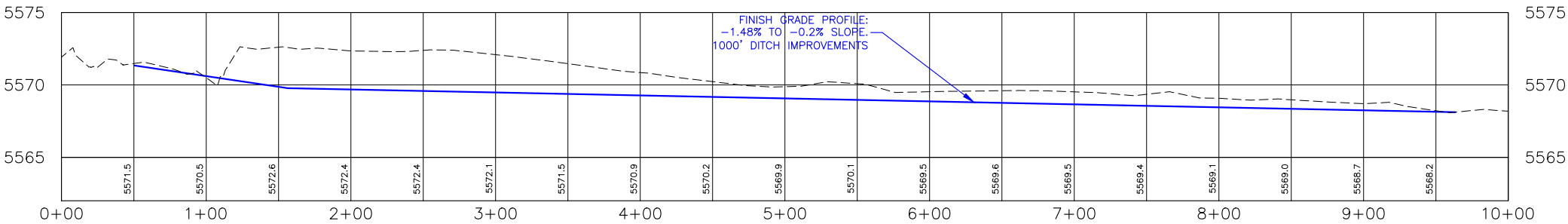


PLAN VIEW OF DITCH



PROFILE VIEW OF DITCH STA. 0+00 TO STA. 2+60

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 10'



PROFILE VIEW OF DITCH - STA. 0+00 TO STA. 10+00

HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 10'

CONCEPTUAL

NO.	REVISION DESCRIPTION	BY	DATE
1			
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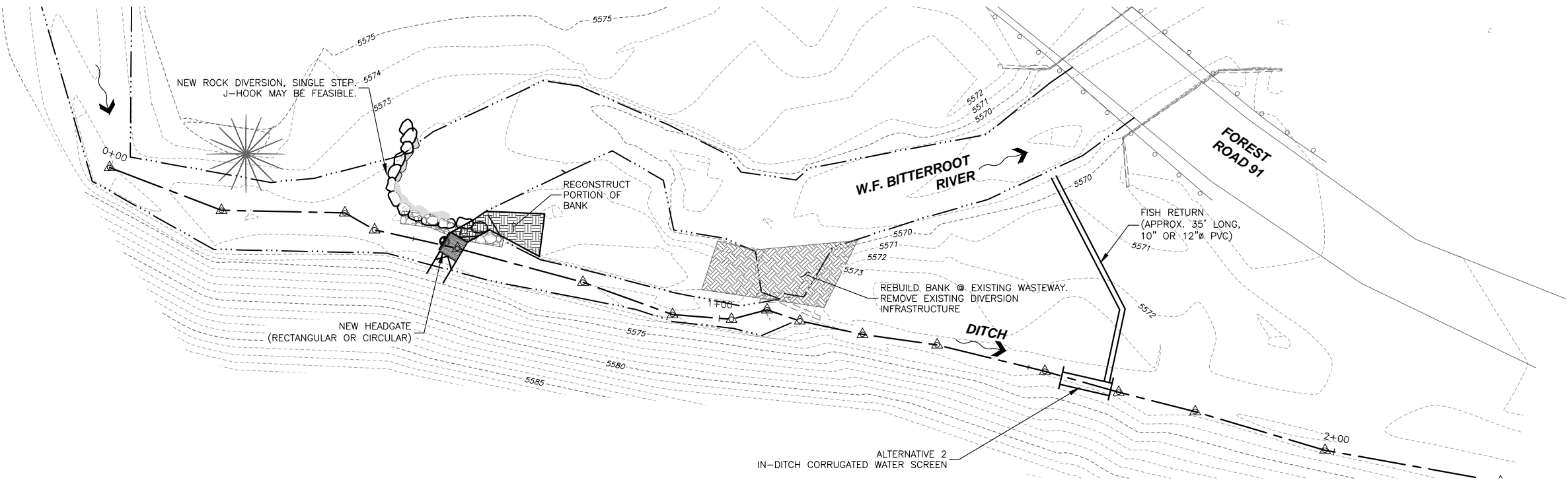
PROJECT: 1-18266
DESIGNED: RME
DRAWN: RME
CHECKED: ---
APPROVED: ---
DATE: NOVEMBER 16, 2018



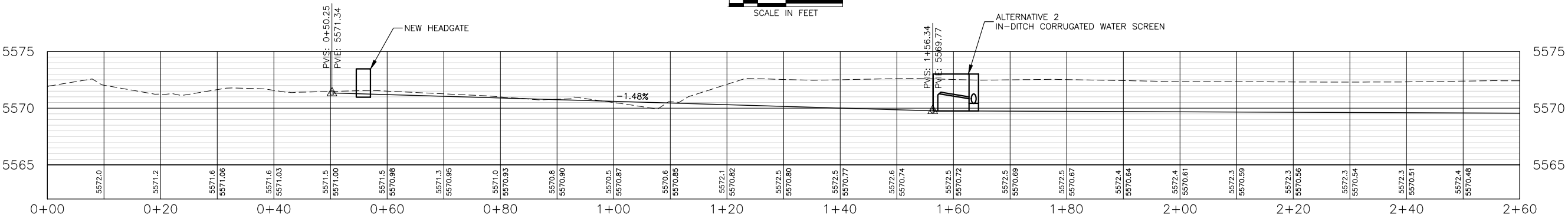
TROUT UNLIMITED
WEST FORK BITTERROOT -
DIVERSION & FISH SCREEN
NEW DITCH PROFILE

SHEET NO.

5
OF 6



PLAN VIEW OF IN-DITCH CORRUGATED WATER SCREEN W/HEADGATE - STA. 0+00 TO STA. 2+60

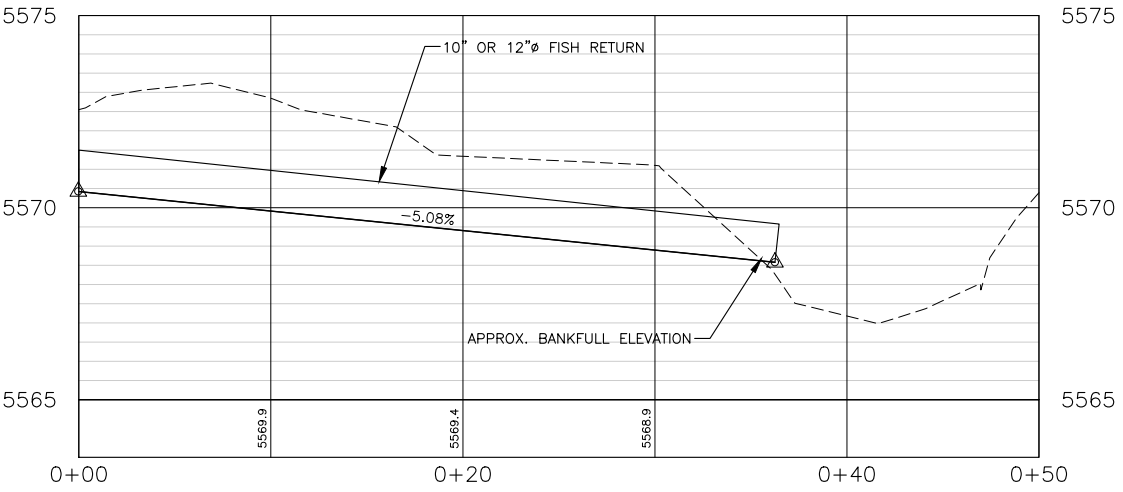


PROFILE VIEW OF IN-DITCH CORRUGATED WATER SCREEN - STA. 0+00 TO STA. 2+60

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 10'



EXAMPLE PHOTO
(CORRUGATED WATER SCREEN)



PROFILE VIEW OF FISH RETURN - STA. 0+00 TO STA. 0+50

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 5'



FISH SCREEN RETURN LOCATION

CONCEPTUAL

NO.	REVISION DESCRIPTION	BY	DATE
1			
2			
3			
4			
5			

PROJECT: 1-18266
DESIGNED: RME
DRAWN: RME
CHECKED: ---
APPROVED: ---
DATE: NOVEMBER 16, 2018



TROUT UNLIMITED
WEST FORK BITTERROOT -
DIVERSION & FISH SCREEN
CORRUGATED WATER SCREEN DETAILS

SHEET NO.

6
OF 6

F:\1-18266-TU Bitterroot Fish Screen & Diversion Designs\CADD 1-18266-West Fork\Sheets\1-18266-WestFork-07-CWS.dwg



United States
Department of
Agriculture

Wilson Ditch fish screen
Forest Service West Fork Ranger
District

6735 West Fork Rd.
Darby, MT 59829
406-821-3269

File Code: 2620

Date: November 26, 2018

Christine Brissette
Trout Unlimited
Special Projects Manager
312 N. Higgins, Suite 200
Missoula, MT 59802

Christine:

The Wilson irrigation ditch and its point of diversion is located on the West Fork Ranger District of the Bitterroot National Forest. As the surrounding landowner, the West Fork District supports the installation of a fish screen on the Wilson irrigation ditch.

The Wilson ditch would remove water from a section of the West Fork Bitterroot River that is designated as critical habitat for bull trout and provides spawning and juvenile rearing habitat for bull trout. The presence of a fish screen would greatly reduce the risk of juvenile and young-of-the-year bull trout from becoming entrained in the ditch and perishing. The fish screen would also reduce/prevent losses of Westslope cutthroat trout, another native species that commonly occurs in the West Fork Bitterroot River near the point of diversion.

The District appreciates your efforts to get a fish screen installed on the Wilson ditch.

Sincerely,

SETH A. CARBONARI
West Fork District Ranger
Bitterroot National Forest





11/27/2018

Christine Brissette
Trout Unlimited
312 North Higgins
Suite 200
Missoula, Mt 59802

Dear Christine:

I have reviewed your application for a fish screen on the Wilson Ditch, which diverts water from the West Fork Bitterroot River upstream of Painted Rocks Reservoir. This is a well thought out project that is the result of a comprehensive review of ditches in the Bitterroot drainage. I support your Future Fisheries application.

You and others completed the Upper Bitterroot Irrigation Diversion Inventory and Prioritization Study in 2017 that identified priority ditches for screening. This ditch was rated as a high priority and is located in a reach of stream that should support Bull Trout and Westslope Ciththroat Trout well into the future according to the Cold Water Climate Shield report.

While I have not seen a Corrugated Water Screen, I did review the website and the screen should require less maintenance than the other screens in the Bitterroot Valley. If you would like, I will try to attend the meeting and support this project when the Future Fisheries panel meets.

Sincerely,

Chris Clancy

Chris Clancy
Fisheries Biologist